

VAGUE SPACE

THE EXPERIENCE OF WINE AND ARCHITECTURE

MASTER THESIS

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DATE: 24.02.2015





WINE CULTURE CENTRE • VERONA

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Title of thesis: Vague Space -- The experience of wine and architecture
Date:24.02.2014
Department:Department of Architecture
Academic Chair: Public Buildings
Chair Code: A-8
Supervisor: Pirjo Sanaksenaho
Drawing Panels: 6 pcs
Model: 2 pcs
Number of pages: 63
Language: English

Cultural architecture is a physical of manifestation to the culture. Space is a strong way to show this manifestation, because spatial experience relates intimately with one's mood. A good spatial experience is able to empathize with the activity occurring within the space. I chose the architecture competition for a Wine Culture Centre as my thesis topic, because I see that the experience of drinking wine that can be expressed through the architecture. I use the design of the Wine Culture Centre to demonstrate my design method and attitude towards the relationship between space and activity. I began the project by visiting the site and conducting research into the site and surrounding context. Two thousand years ago, humans began to plant grapes and make wine in Verona and today Verona continues to be one of the world's most prolific regions for viticulture. A new wine culture centre will rebuilt around an existing winery. Within this culture center, the memory of wine and the culture of wine exist in the place all the time. Wine culture centre materializes the experience of wine into physical material. Furthermore, context, rituality and vague atmosphere are some common features in both wine and architecture and will be explored in this project. The terroir of wine shows how wine captures its context of making wine, tasting wine conveys rituality, vague atmosphere happens during drinking wine when we begin to feel a little drunk, all these similarities are transformed and applied in the spatial atmosphere and organization of the building. Moreover, natural elements are important to utilize in architectural emotion. Sunlight, rain and land are presented in architecture to evoke a connection to nature. The interaction between natural elements and architectural space allows nature to be easily experienced. In the project, I focus on the experience of visitor in the wine culture centre and the design aims to create architectural manifesto to experience of wine and terroir in Verona.

Key words:

wine, culture centre, context, emotion, experience, vague space



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Introduction

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Background

Cultural architecture not only provides physical space for functional use, but also creates a suitable spatial experience for activity. A person's mood can be affected by the space they are in, what is the relationship between space and activity in architecture? To consider this question, I chose the architectural competition for a wine culture centre as my thesis topic. I use wine activity as a method of exploring and discussing the design of emotional space. The competition was organised for young architects by Young Architect Competitions¹ in middle 2014. In the brief of the competition, the purpose is described as 'What kind of architecture can be proposed in order to host and promote a culture related to one of the most ancient but most contemporary human activities?' In my design, I began by looking at wine activities and realized that there are many similarities with architecture. With my design, the common features between wine and architecture are transformed into an architectural language. By developing particular materials and structures, the architecture provides a suitable atmosphere for wine activities.

1. YAC is a association whose aim is to promote architectural competitions amongst young designers.

Valpolicella is derived from several Greek and Latin phrases that meant "the valley of many cellars". Viticulture and winemaking have long history over 2000 years here. Verona is one of the world's most prolific regions for viticulture today as well as a popular tourism city which is famous as the city of Romeo and Juliet, the historical Arena and Lake Garda.

Fig 1. Verona's Map



Fig2. Lake Garda



Fig3. Negrar



Fig4. Centre of Verona

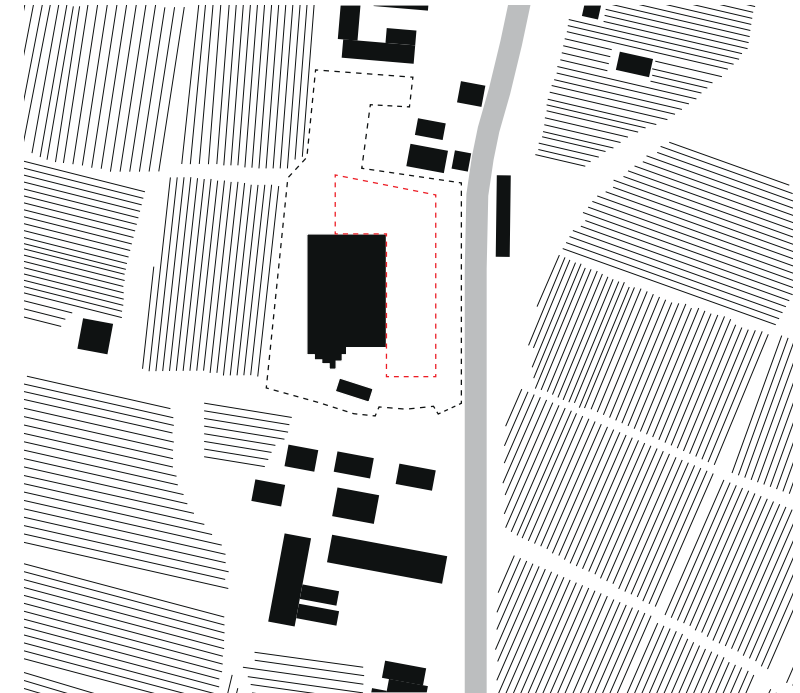
Fig 5.Site's photos



Fig 6.Negrar's map

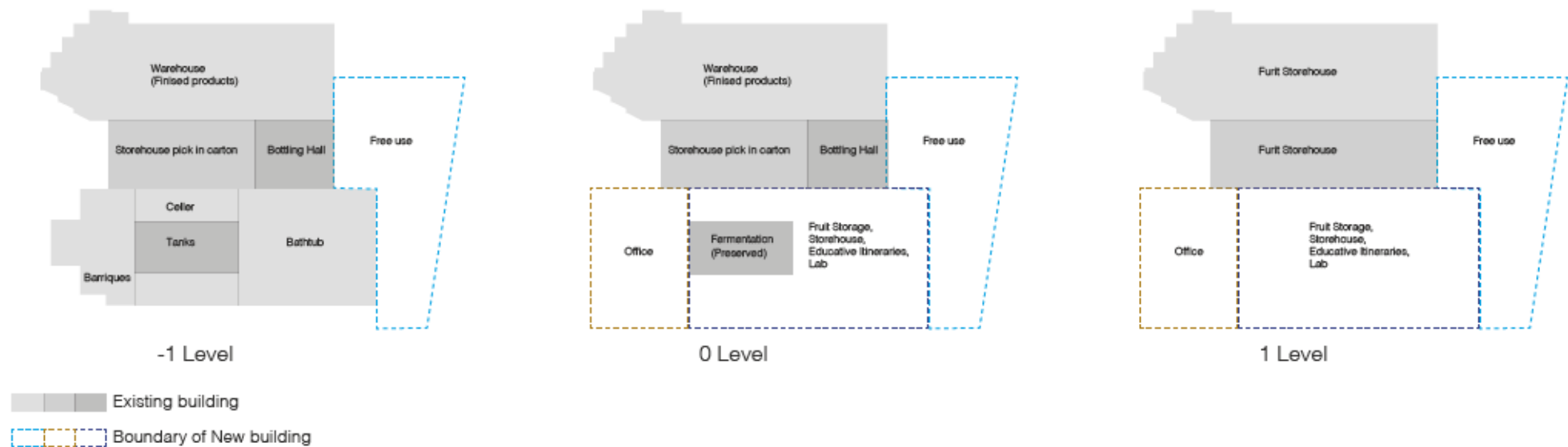


Cantina Valpolicella Negrar cooperative company was founded in 1933, located in the middle of Valpolicella, Verona, Italy. Part of existing winery is redesigned to afford the company's development. The new building will be a wine culture centre to host wine tourism, wine training, research and public activities. Wine culture centre needs to consider wine culture, territorial features and notable features.



Programme

Existing building and possible interventions



Storehouse



1600m²

Products ready to be delivered. This area has to be close to the bottling area. This area needs a loading and unloading façade for 3 trucks at least.

Fruit storehouse



1000m²

Space intended for grapes' withering. This process is fundamental for the production of the main label here produced. However, this space works for 3 months a year only - becoming an empty storehouse for the rest of the year. This space might host temporary activities.

Research Lab



150m²

Spaces destined to research activities. Wine business request to optimize processes and production. The winery might become a detachment of the Verona's University, hosting stages / seminars / international labs.

Job training Production Itineraries



Spaces and itineraries intended for showing the main features of the production chain without compromising safety requirements. Visitors might overlook technical areas such as laboratories / storehouses / bottling area / etc. from walkways / showcases / arcades / etc.

The competition described the programme in following words "Cantina Valpolicella Negrar seeks a production facility proposal able to match up to the prestige of its brand.

However, the present competition aims to transcend the mere quest for a catchy / fancy architecture. The whole purpose is to rethink the concept of "winery" under a **CON-temporary perspective**, transforming the winery from being a simple storehouse / production facility to be a catalyst for **culture, tourism and research**.

Wine production has not to be compromised in this process; on the contrary it has to become the pivotal feature to frame within the architectural design. Such proposal shall

comprehend a wide range of activities enduring / temporary, intellectual / recreational well connectable with **wine related activities**. The purpose is to define an architectural manifesto for wine culture - a culture that mixes technique, pleasure and aesthetics.

This architecture might host seductive spaces for wine tasting experiences / lectures / media showing / media listening / a museum for local wine activities / a hospitality resort / a research centre for professionals / an educational centre for schools. "

Offices



1000m²

Space intended for administrative and directional activities.

Multi-purpose area



Multi-purpose modular / detachable spaces. Rentable pods for private customers / community events / workshops related to wine culture and social life.

Tasting room



Spaces structured in order to host / enhance / articulate the wine-tasting experience through visual / olfactory / auditory stimulations.

Wine museum



Spaces intended for hosting temporary / permanent exhibitions / events focusing on the bond between wine, art, history and literature / focusing suggested on training visitors' culture.

Wine and Architecture

- Place and Terroir
- Rituality
- Atmosphere
 - Vague Space
 - Precedents

Fig 7.Wine and cellar



While we believe that wine is an intrinsically more substantial object of aesthetic appreciation than most other foods or drinks (or perfumes), what really makes the difference is the context .
---- "The Aesthetics of Wine"

Place and Terroir

Architecture and wine share same context in one place. Wine captures land, climate, history and culture as liquid in cup. Likewise, architecture is also a medium of context. When wine activities happen in the architecture, terroir is presented in space to connect wine.

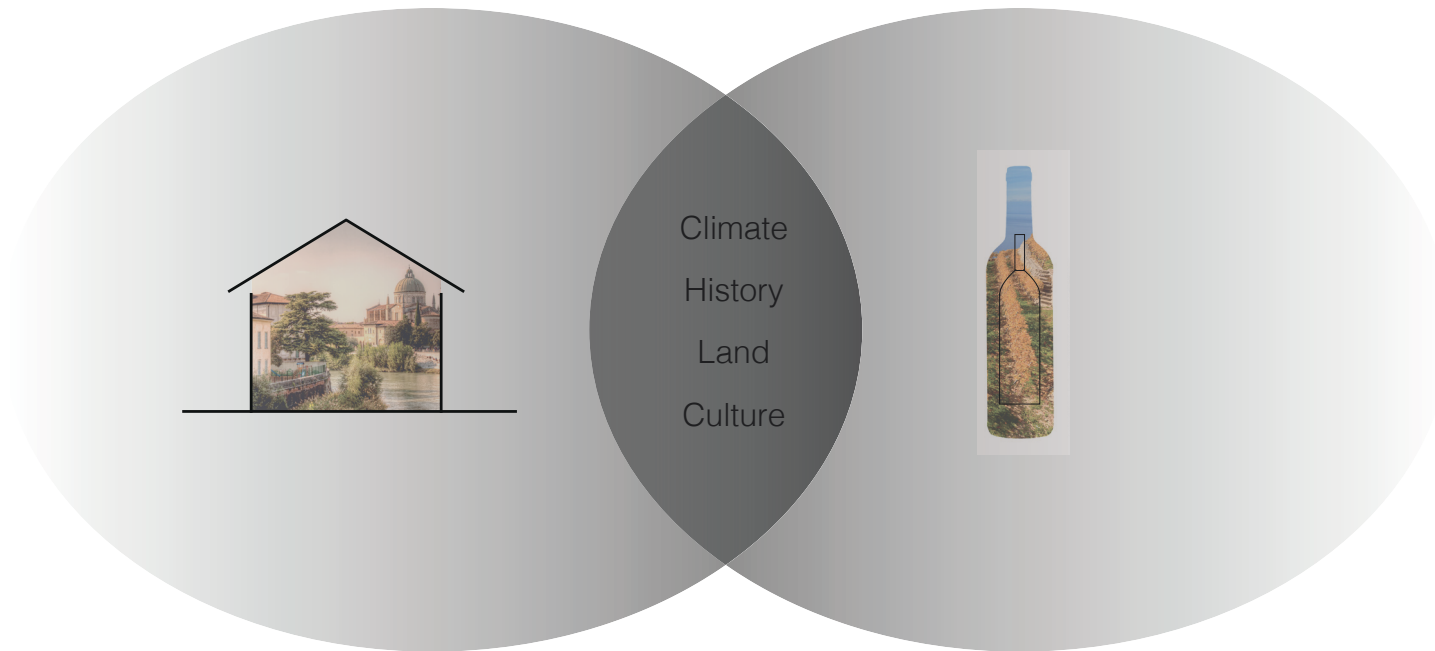


Fig 8. Riverside, Verona

Fig 9. Reign of Terroir



The 'bodily senses,' reflection, integration and memory work together to make sense of a liquid that bears the sensory imprint of land, climate, history and culture.

---- The Aesthetics of Wine

Fig 10. Terroir and soil

Rituality

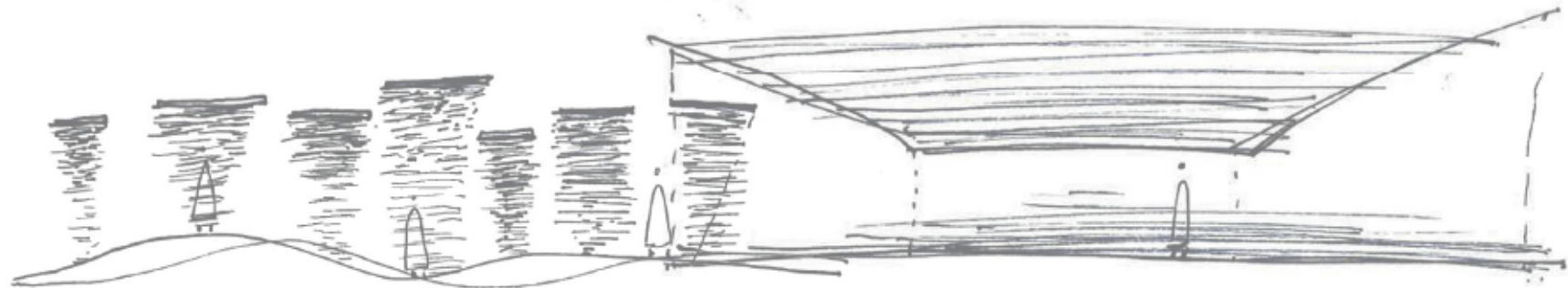
Wine appreciation is thus like the rituals of a secret society that seem to have some kind of vague magic power, but actually only serve to distinguish between those on the inside and those on the outside.

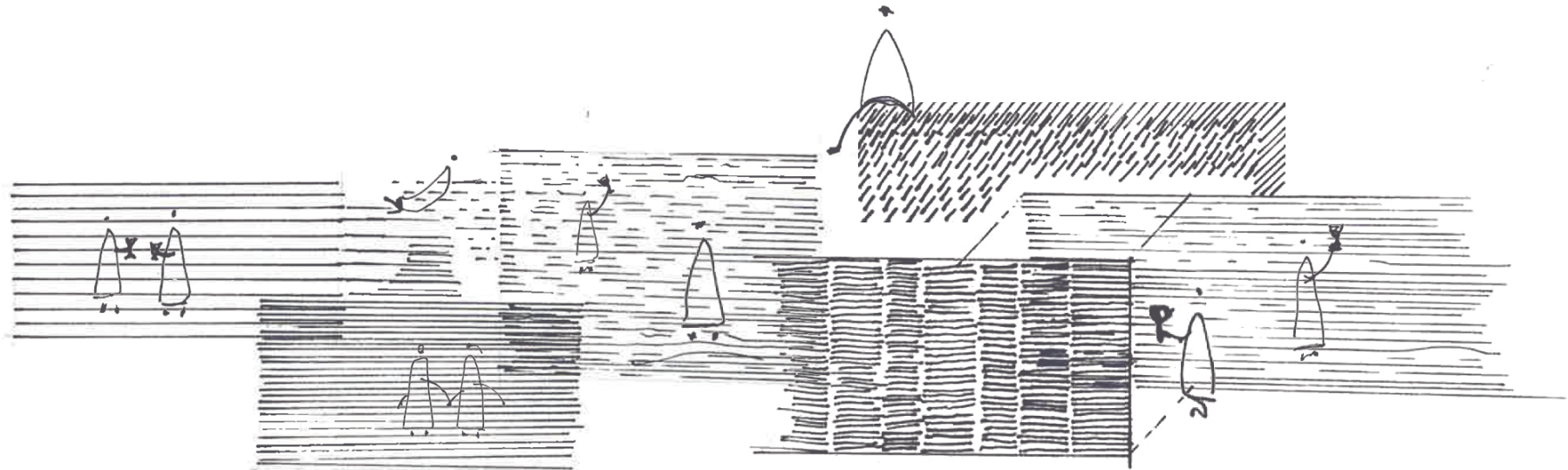
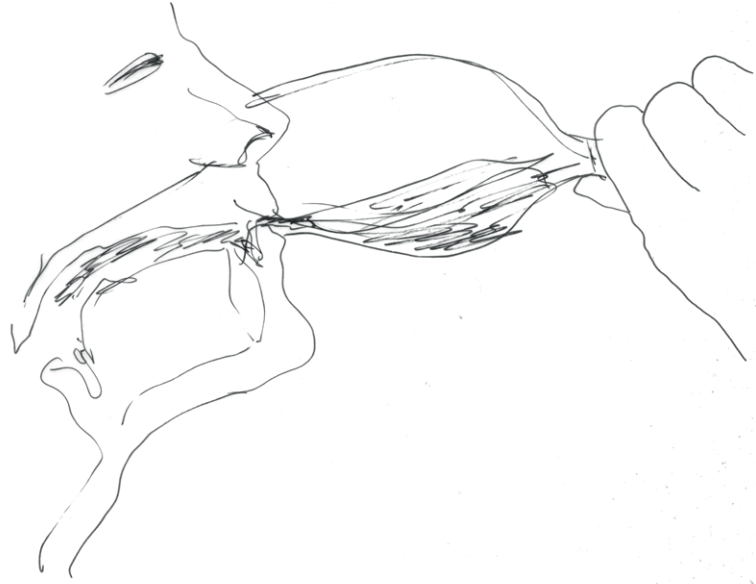
— "The Aesthetics of Wine"



Fig 11. Wine Tasting Sketch

Tilting the wine glass to observe wine's color and status, swirling cup, putting nose into cup to smell, tasting wine in mouth are steps of wine appreciation. A series of steps conveys rhythm and rituality of wine appreciation. A sequence of different spaces are organised compactly and linearly to form rituality when visitor stays and moves in architecture.





Atmosphere

Vague Space

Some spaces can be defined clearly, but some spaces' are ambiguously defined, where the boundary between inside and outside is blurred and scenes overlap. I call this unclear scene as "vague space". During drinking, sight is blurring, sense is slowing down and awareness is becoming ambiguous. Wine helps people to release vague emotion in head. Vague emotions happen in vague space, spirit meets material and atmosphere.

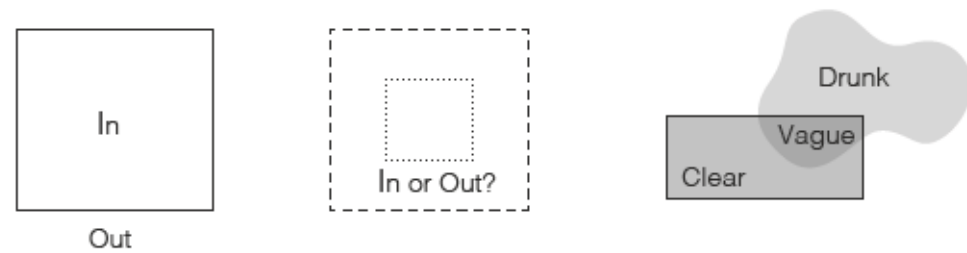


Fig 12. People's movement

Possibility of division

Hearing, seeing, smelling and touching are basic people's senses. When one or two senses are disturbed, the integrity of space is broken and become a vague atmosphere. Wall is common way to divide space, different material and forms own various potential to build vague space. People's activity behind wall leak out to active the vague space lively and dynamically.

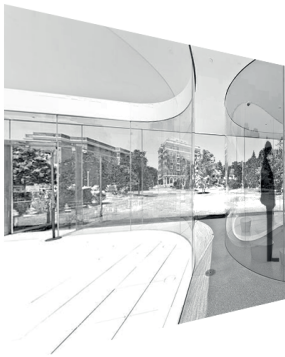


Fig 13. Glass Pavilion at the Toledo Museum of Art



Fig 14. Double Blind



Fig 15. Translucent polycarbonate



Fig 16. polycarbonate skin



Fig 17. Swiss pavilion in Hannover



Fig 18. The screen shifts between being opaque and semitransparent.

Precedents

Swiss pavilion in Hannover

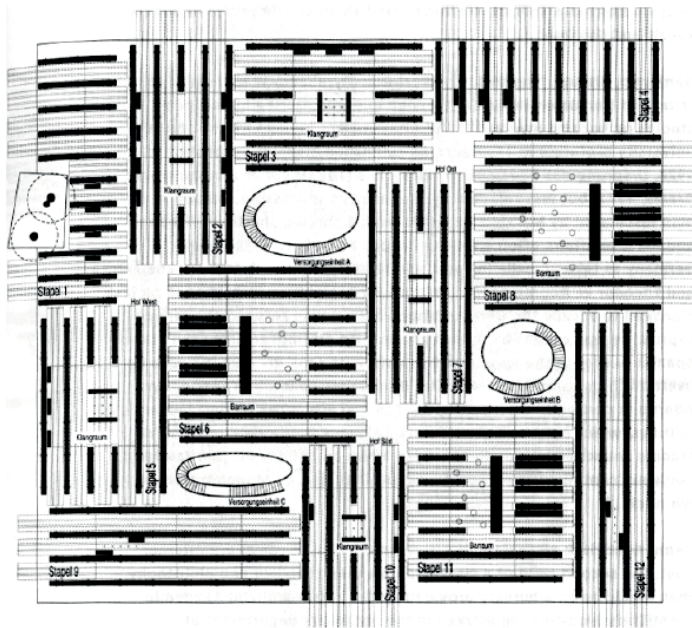
Swiss Pavilion in Hannover is a place for Expo visitors to have a rest with live music. Peter Zumthor divides up the interior into a maze-like space using lattice stack of wood. The wood boards are assembled layer by layer with gaps by steel cables. People can hear sounds and smells behind the wall, but are unable to see it clearly. Texture, smell, colour of wood and movement of people blend together in integrated space to create vague atmosphere.



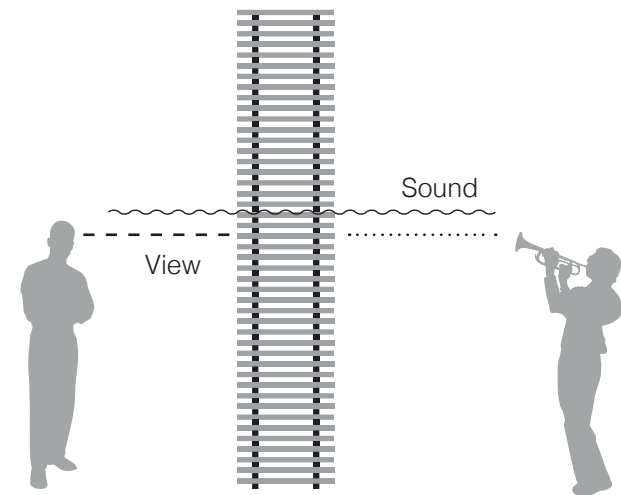
Fig 19. Swiss pavilion at EXPO 2000 in Hannover



Wood does not only have enrich experience in view and touch, but also brings smell in space.



Division of wooden wall makes people's experience in movement.



Wooden wall transforms clear view to shadow and sketch. Sound still can be heard to keep space integration.

Precedents

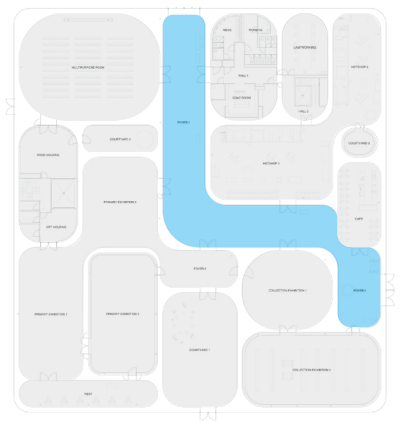
Glass Pavilion at the Toledo Museum of Art

Glass pavilion at Toledo Museum of Art is consisted of a series of glass rooms. The juxtaposition of transparent rooms form an overlapped scene. The vision changes dynamically when people move. Although every room keeps connection in vision, sound and smell are isolated between rooms. Moreover, transparent walls enlarge the influence of natural elements such as rain or fog.



Fig 20. Glass Pavilion at the Toledo Museum of Art





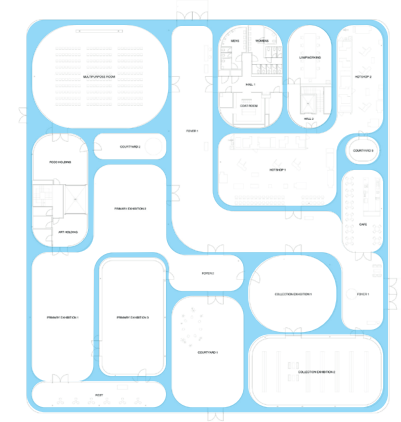
Long foyer

Linear foyer guides visitors to appreciate building in various views.



Courtyard

Courtyard is the outdoor space inside the building.

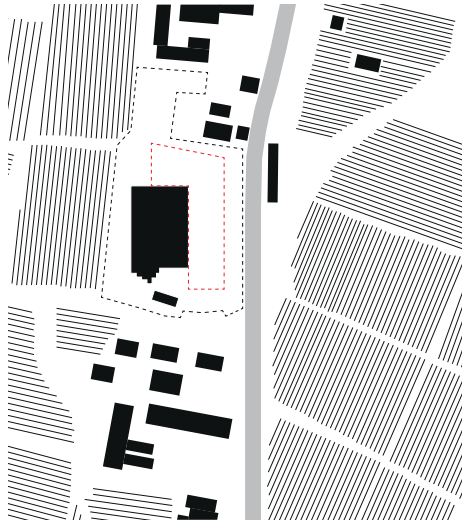


Gaps

Gaps create ambiguous space between two next rooms.

Design Process

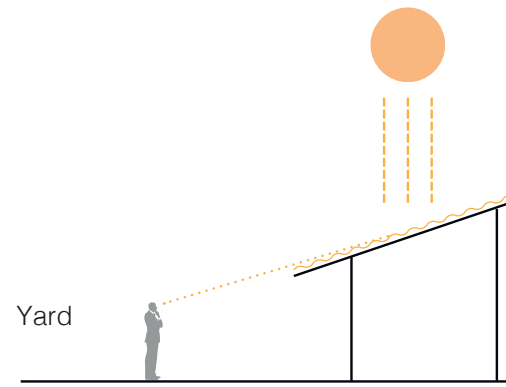
- Site Analysis
 - Climate
 - Site
 - Site Plan
- Programme
 - Plans



Climate

Climate is key element to wine's terroir. Sunlight and rainwater are presented in architectural way to evoke respect to nature.

The site is located in Verona with temperate climate. People can enjoy nature and hold outdoor for most of the year. The warm season is from June to September and the highest temperature is about 30 celsius. The winter lasts during December to February between -1 and 10 celsius. Rain happens often so rainwater should be enlarged as dynamic element in architecture. Thunderstorms are the primary precipitation in summer. In cold season, moderate rain and light rain are the main precipitation. Snow is rare in Verona and the wind is gentle for the whole year. Prevailing wind comes from east and south in hot season. South wind is dominant during the winter. The sunshine is good in most of year. It is only cloudy few days in winter.



Sunlight and space

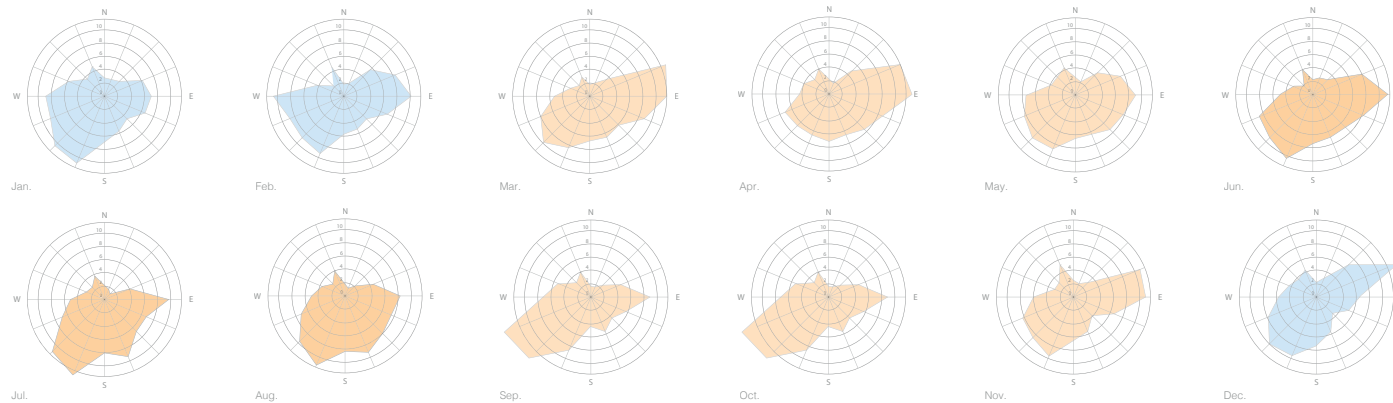
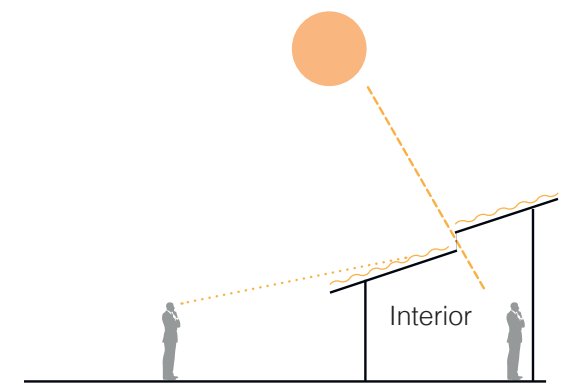


Fig 21. Wind direction distribution

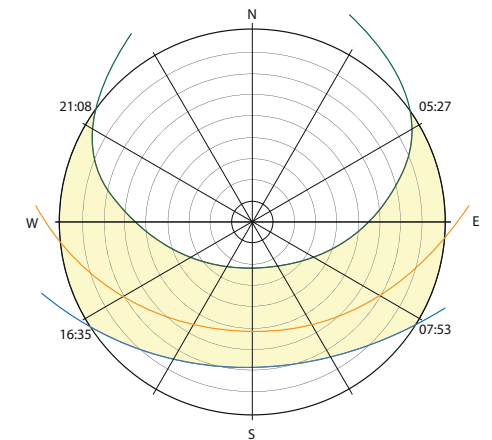
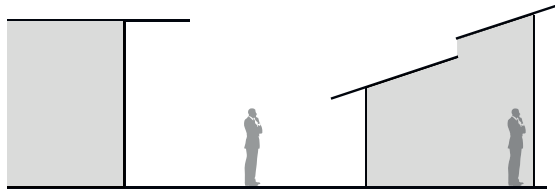
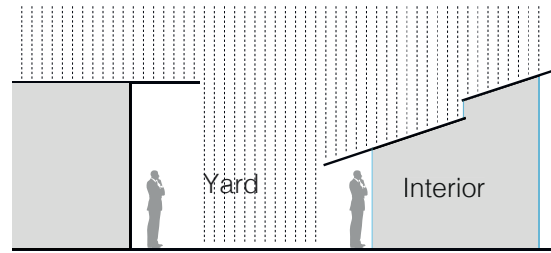


Fig 22. Sun path diagram



Nature and outdoor



Rain and space

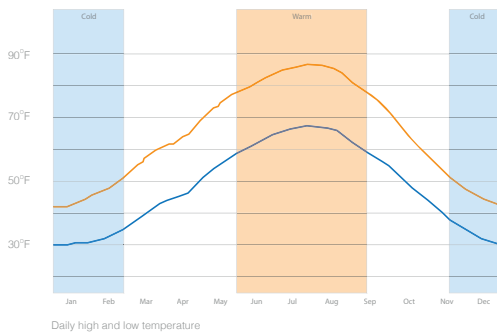
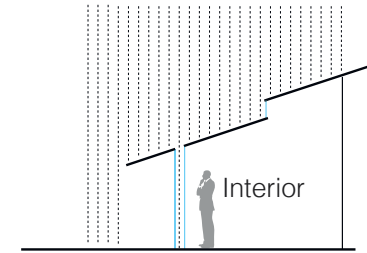


Fig 23. Temperature

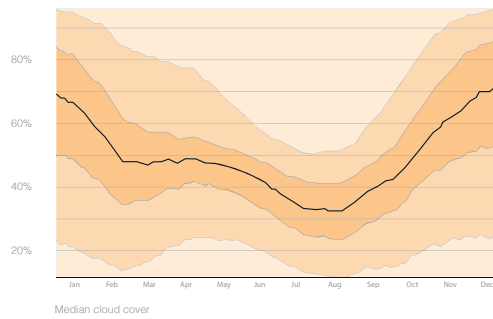


Fig 24. Cloud

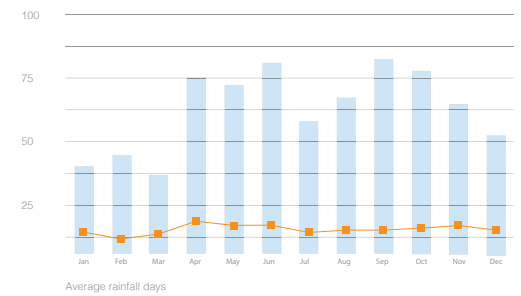
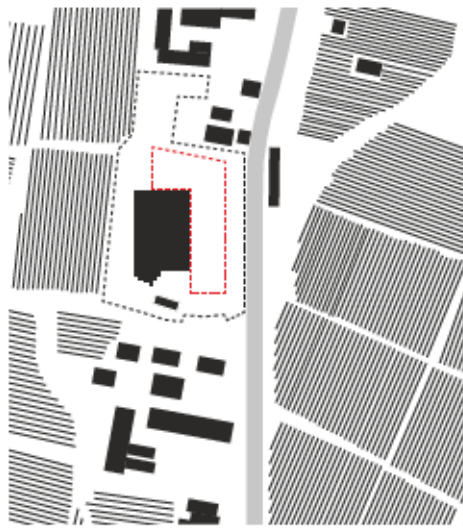
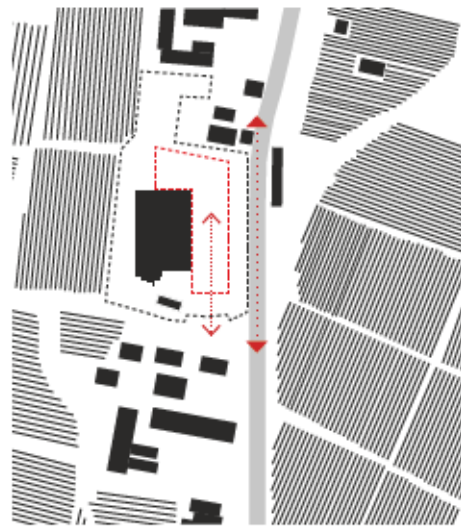


Fig 25. Precipitation

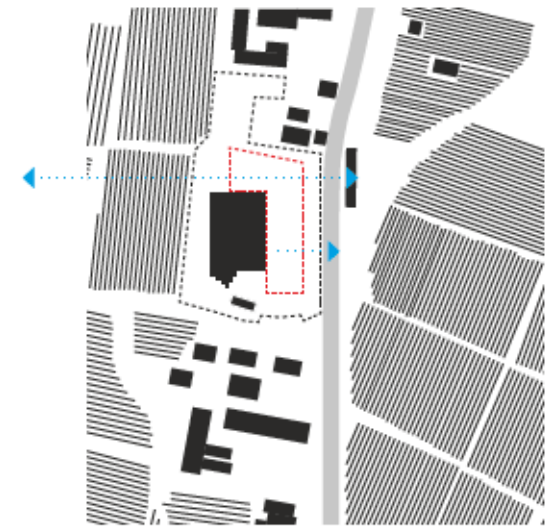




Site



Axis of Circulation



Axis of View

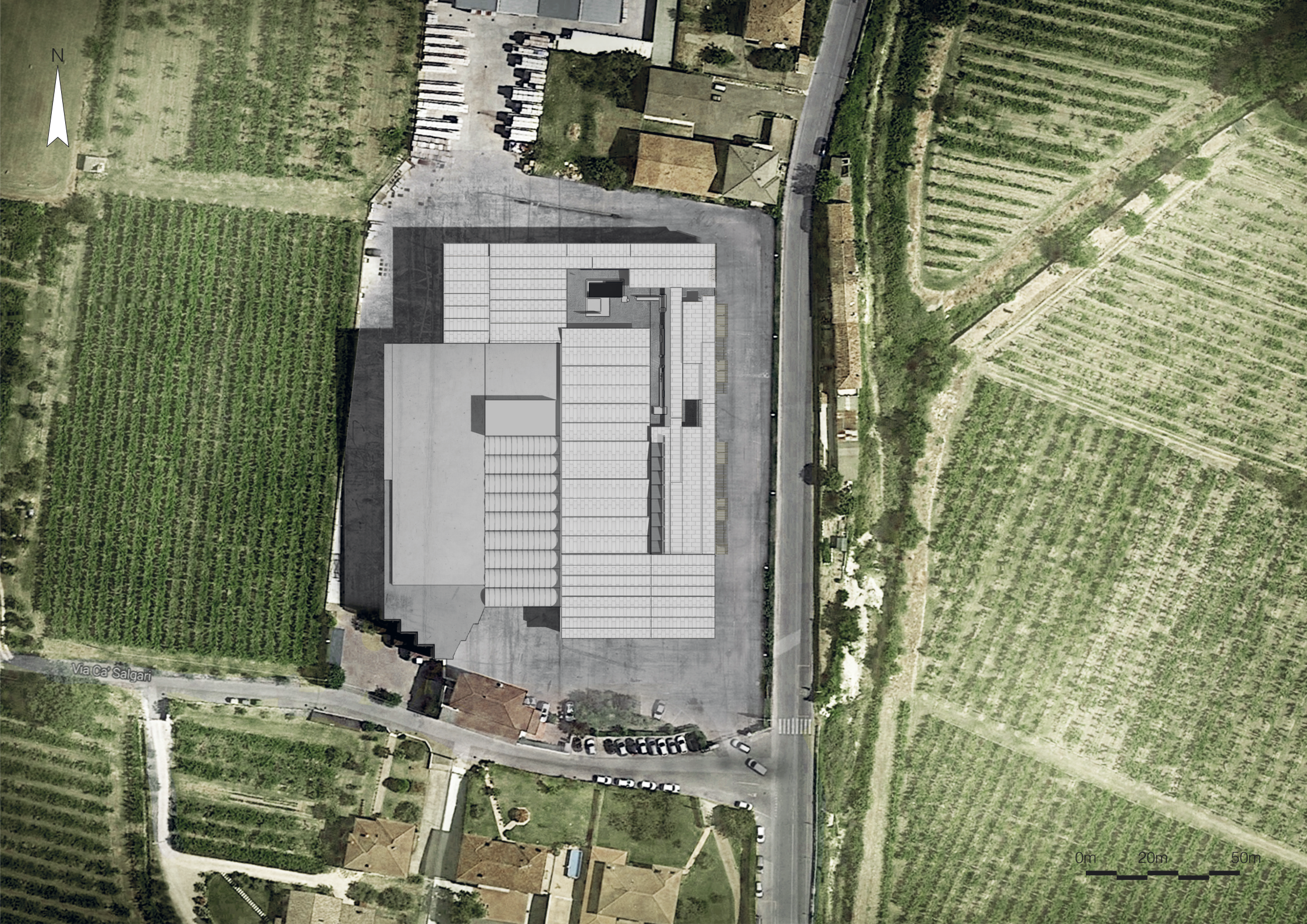
Negrar is a famous area of vineyard. It is covered eighty eight percent cropland. There are foothills around the winery and the altitude is between 150 and 450 meters. Spacious and regular vineyard with few buildings are typical landscape in the area.

The site is next to a busy road in the district, so placing the entrance near the road can attract visitors. Buildings near the site are arranged along the road from south to north. The east and west sides of the site have good views of the surrounding vineyard and foothills. The upper level on the east side along the road gets wonderful views to the vineyard, it is the first choice for holding social activity. Moreover, the activity can be seen from the busy road.

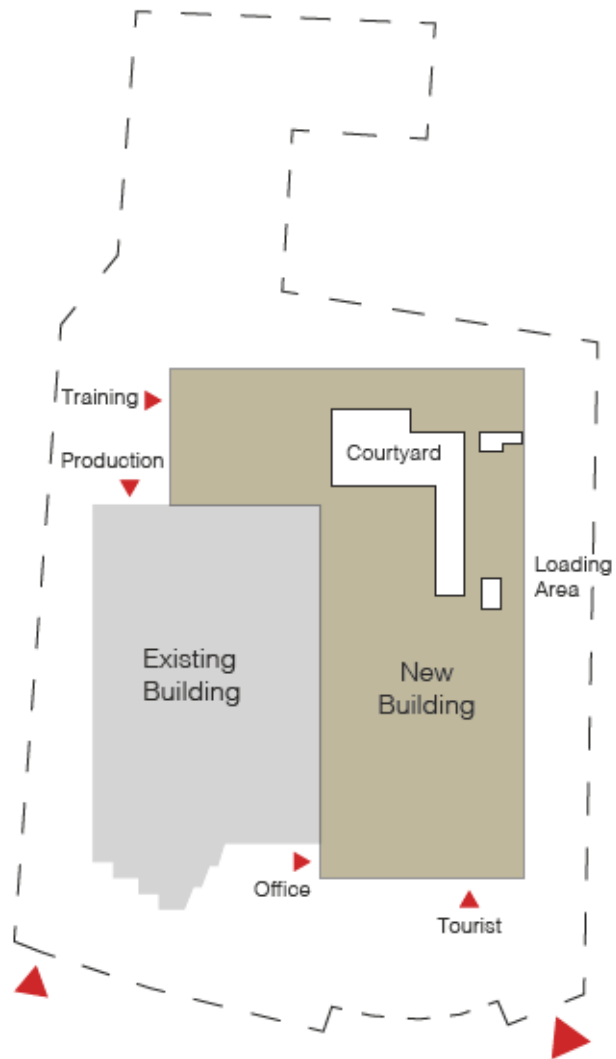


Via Ca' Salgari

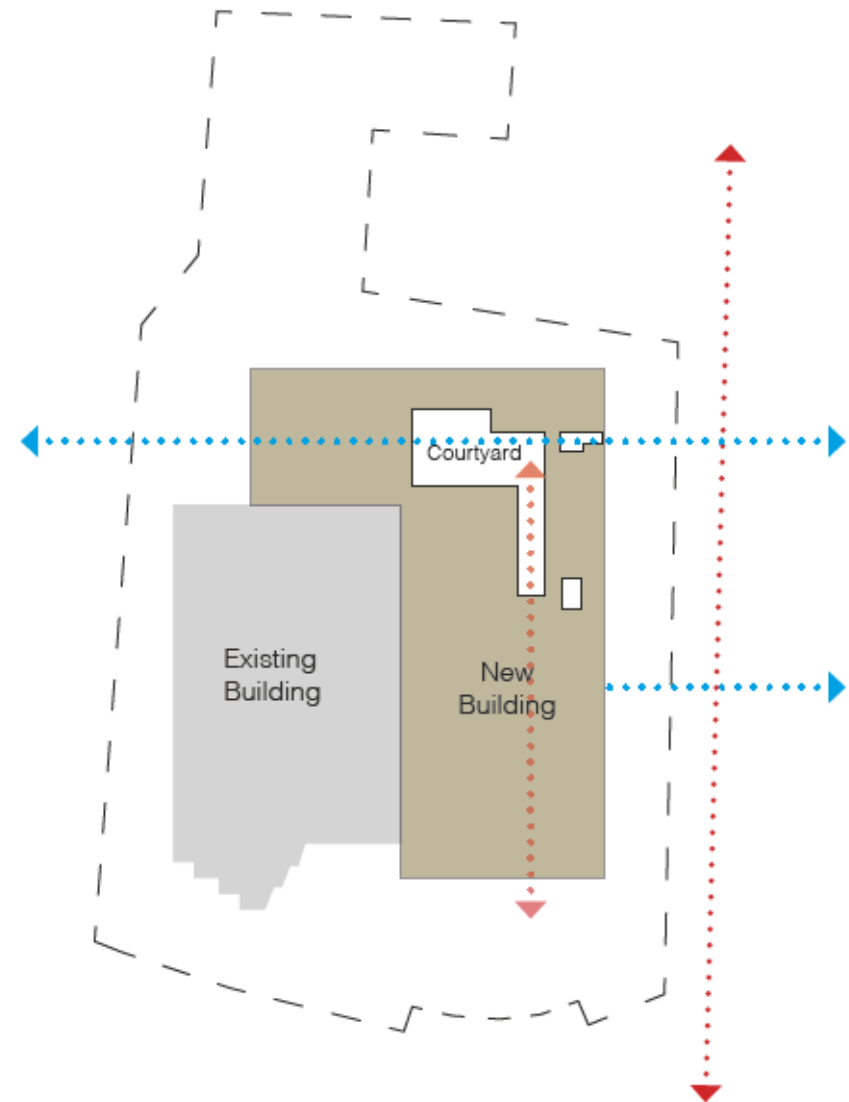
0m 20m 50m



◀ Site plan



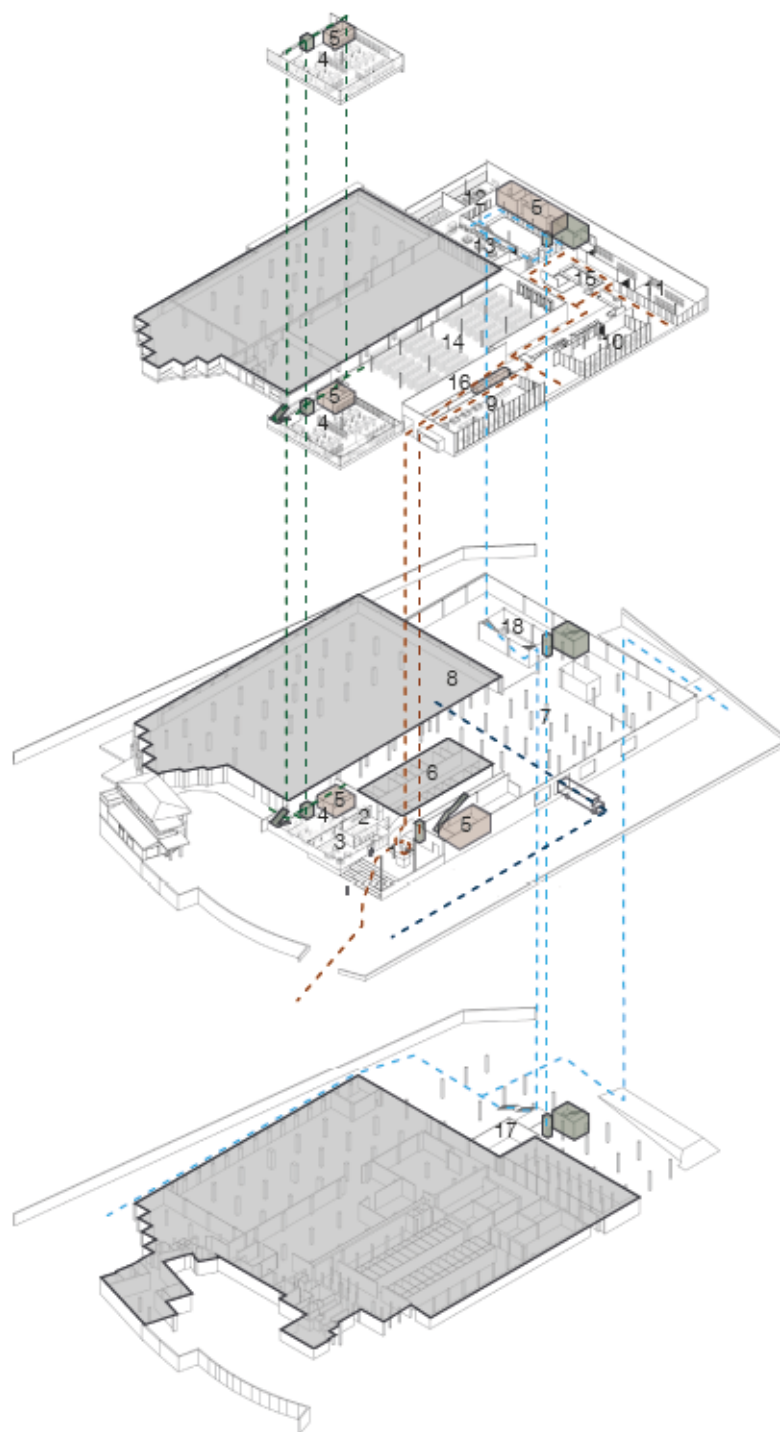
Entrances



..... Axis of circulation








..... Axis of view

Function and Circulation



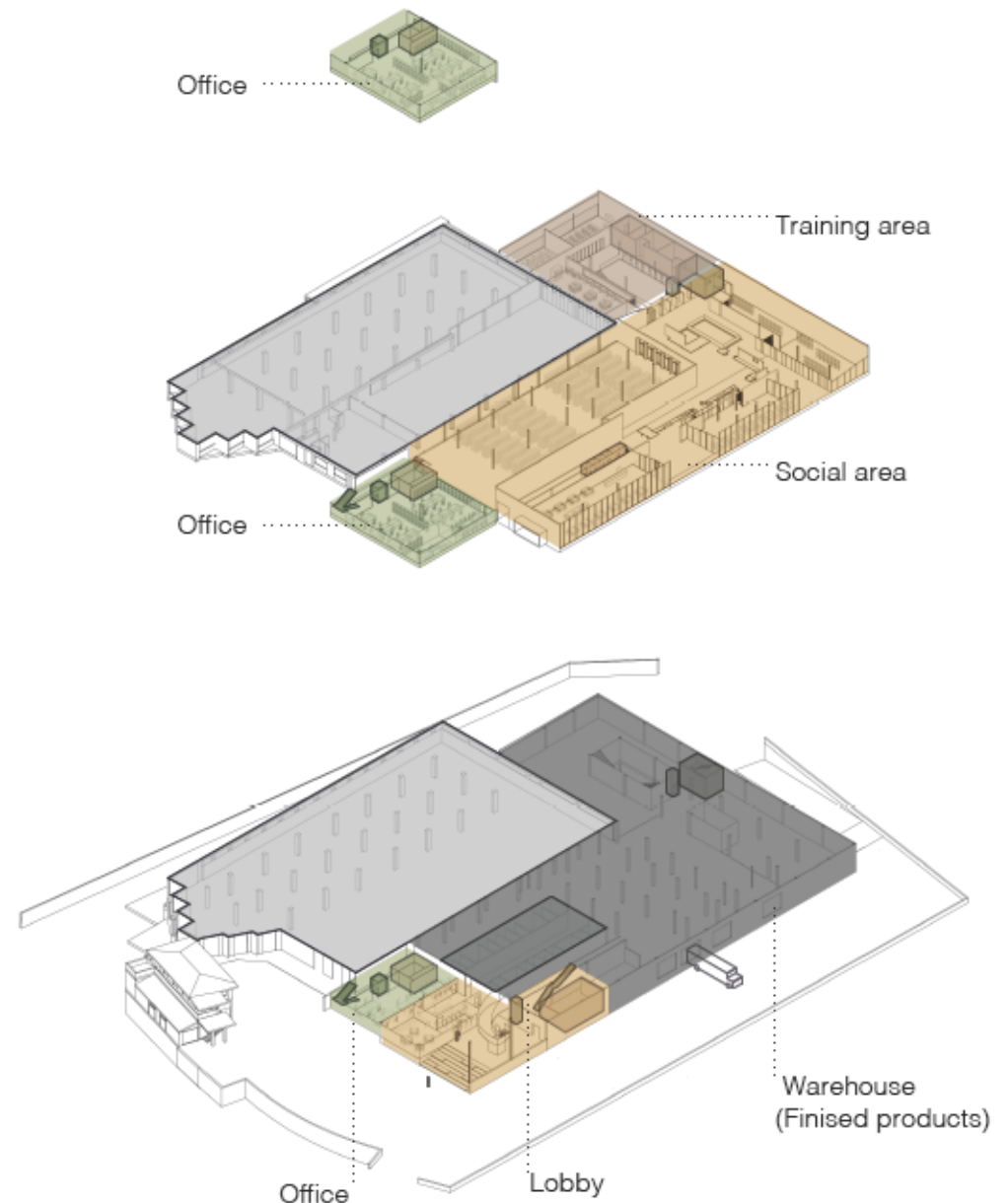
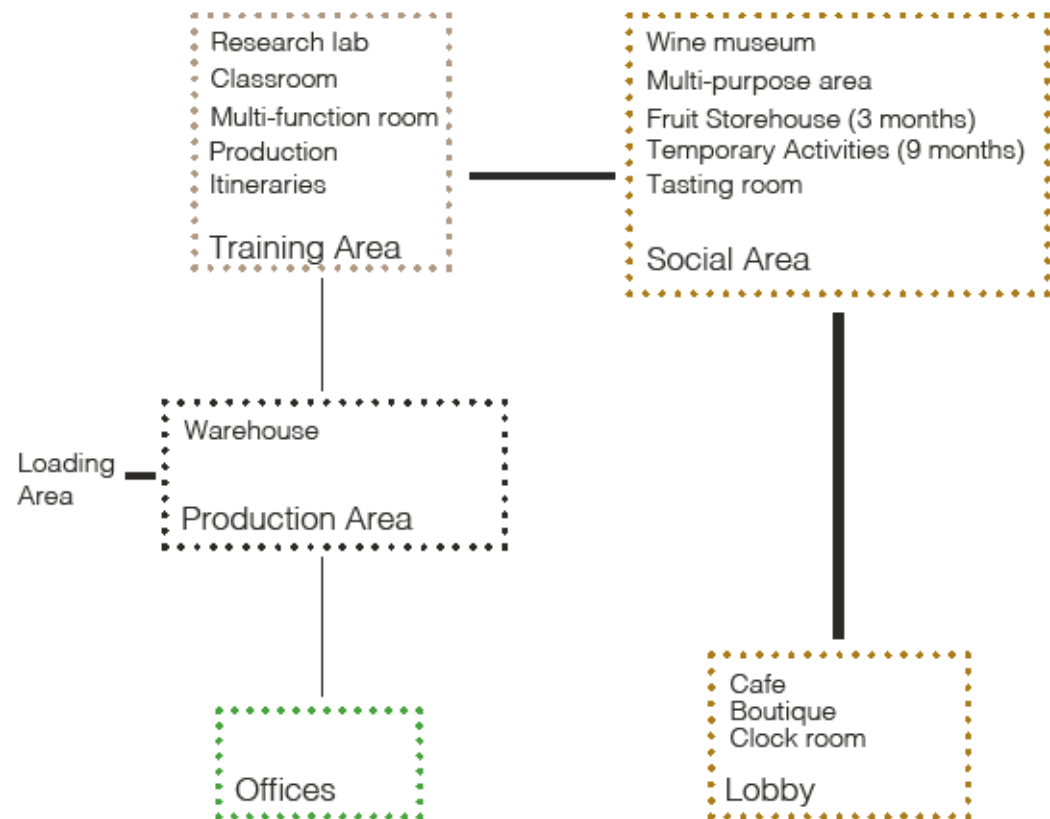
The project has four general function areas. They are the production, office, training and social area for tourists. Different function areas not only need to be kept independent but also maintain good connection with each other. The visitor's lobby is covered outdoor space with a light wood ceiling and close to the entrance of the winery. The outside lobby is like a plaza for people to gather or stay temporarily. On the ground floor, the warehouse needs a huge area to store products ready to be delivered, it connects to the bottling area and the loading area directly. Void spaces keep the relationship between production area and social area. The social area is placed on the upper floor for better views to the vineyard. It consists of a tasting room, a multi-purpose room, a wine museum and fruit storehouse. The fruit storehouse is intended for grapes' withering for 3 months, it can be changed to host temporary activities for 9 months of the year. The courtyard in the social area is a buffer

- | | |
|-------------------------------------|--|
| 1. Lobby | 11. Wine museum |
| 2. Boutique | 12. Training Space |
| 3. Cafe | 13. Lab |
| 4. Office | 14. Fruit Storehouse (3 months)
Temporary Activities (9 months) |
| 5. Toilet | 15. Yard |
| 6. Fermentation | 16. Ramp |
| 7. Warehouse
(Finished products) | 17. Heating / Cooling Unit Room
Electrical Hub |
| 8. Bottling Hall | 18. Overlook Point |
| 9. Tasting Room | |
| 10. Multi-Space | |

- | | |
|---|------------------------|
|  | Existing Building |
|  | Service Room |
|  | Circulation |
|  | Tourist Circulation |
|  | Staff Circulation |
|  | Training circulation |
|  | Production circulation |



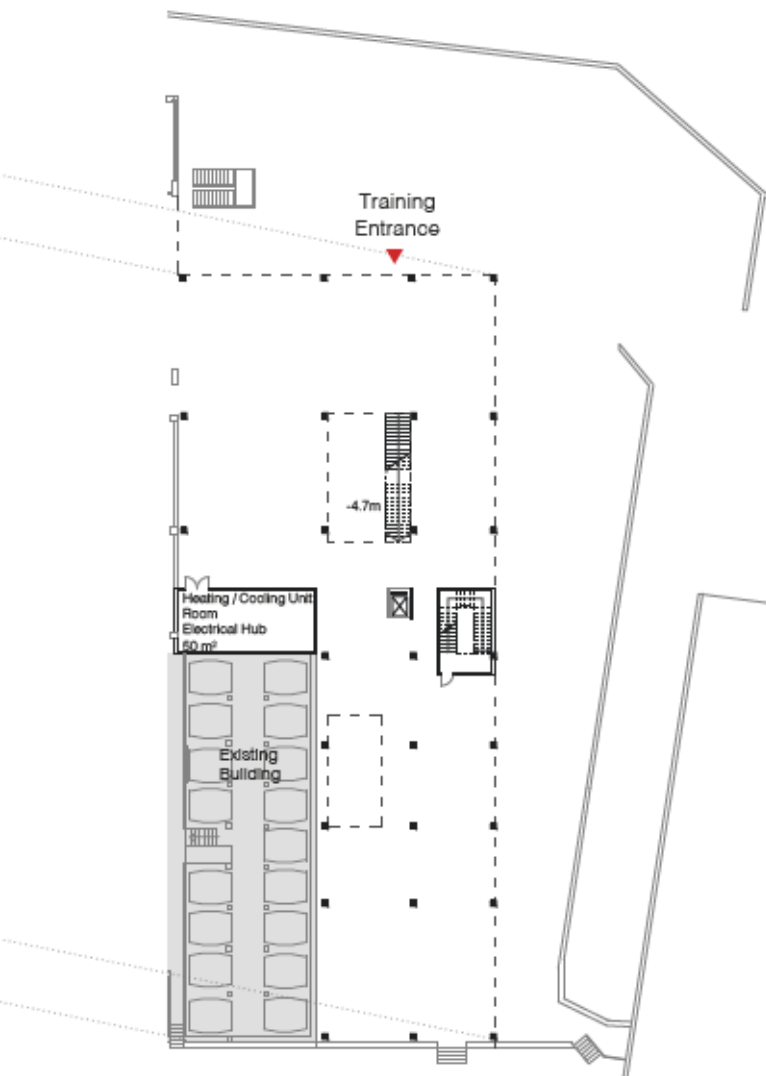
space to link different rooms. The several rooms adapt for various activities in different scale. The training space includes a laboratory, a classroom, a multi-function room and route of production itineraries. The training area is placed in the northwest corner next to the social area. Tourists stay in social area and visit the training area to see the production of wine. The office is an independent area with three stories on southern part of the building and connect conveniently with the production area. The service rooms are put together in the corner of layout. of tasting room, multi-purpose room, wine museum and fruit storehouse. Fruit storehouse intends for grapes' withering for 3 months, it can change to host temporary activities in 9 months else. The courtyard in social area is a buffer space to link different rooms. The several rooms adapt for various activities in different scale. Training space includes laboratory, classroom, multi-function room and route of production itineraries. Training area is in the northwest corner next to social area. Tourists stay in social area and visit training area to realise the wine culture easily. Office is an independent area with three stories on southern part of the building and connect with production area conveniently. Service rooms are put together in the corner of layout.



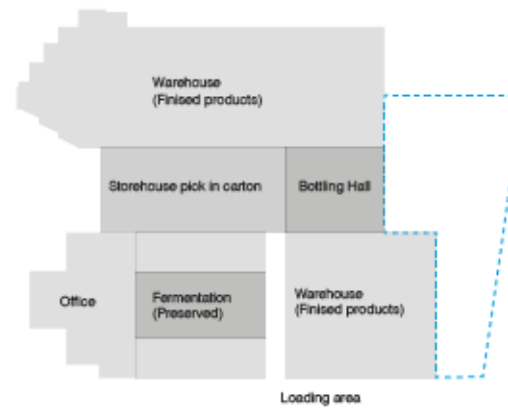


Ground floor plan ▲

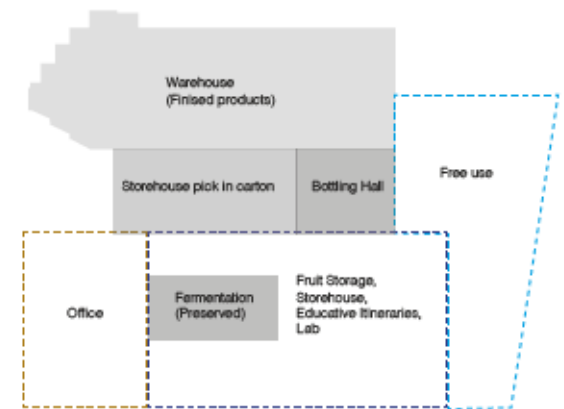
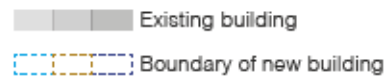
0 5 10 20m



Basement floor plan ▲



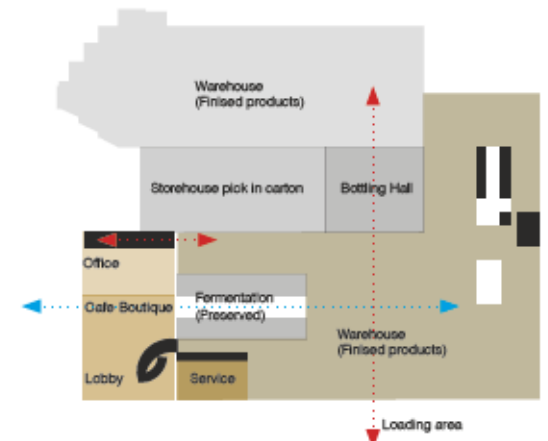
Existing building on ground floor



Possible interventions

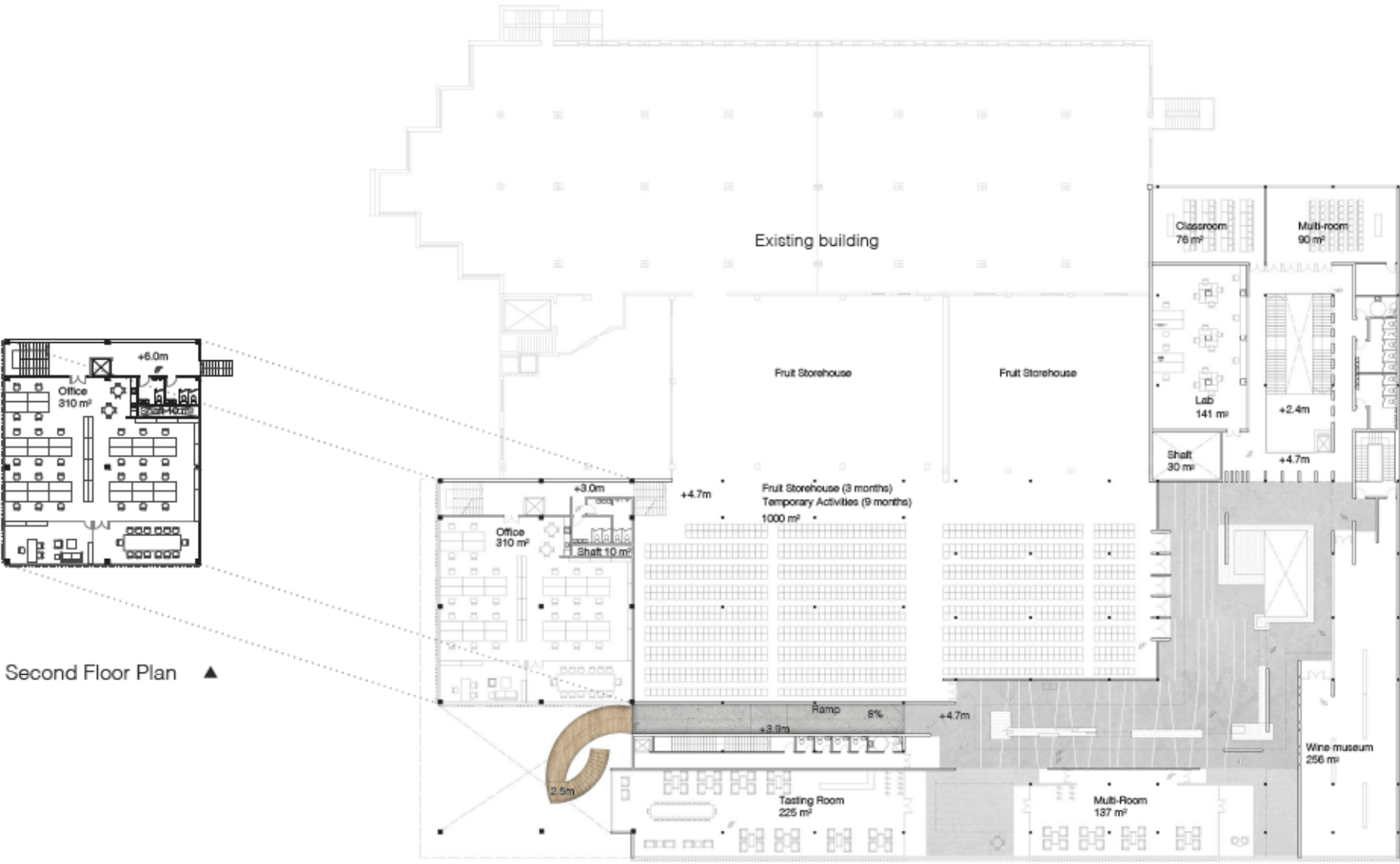


Zoning in new building



Connecting





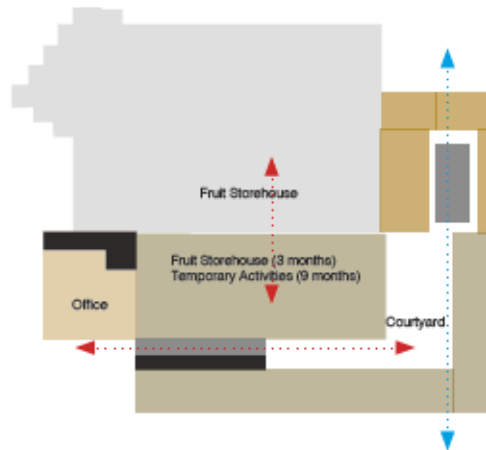
Second Floor Plan ▲

First Floor Plan ▲

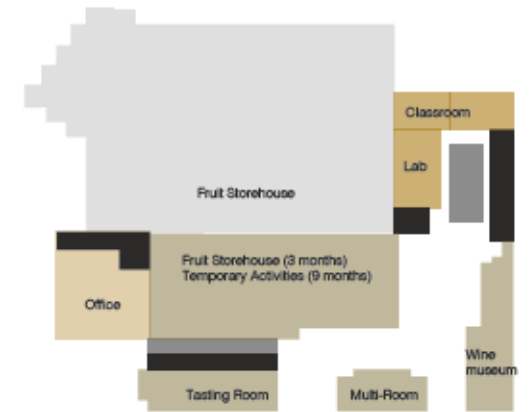




People's activities are on the first floor.

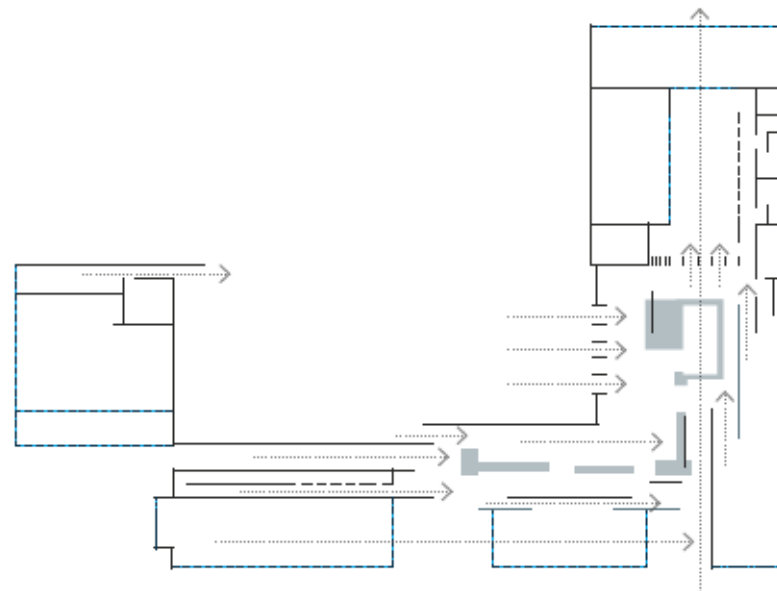


Courtyard keeps the axes of circulation and view continuity.



Courtyard integrates different rooms together.

-> Axis of view
-> Axis of circulation
- Circulation and service



Various arrangements of wall guide people's view and movement between indoor and outdoor.

Ground to Spirit

- Structure
- Material
- Sections
- Facades



Fig 26. Lines of Flight, Akihito Takuma

Concept

Light grapevines grow up from heavy earth and swings in wind. The concept from heavy to light in space responds to the transformation from production to culture, material to spirit. Atmosphere of the space follows the change from heavy to lightness vertically. Structure, material and function all follow this metaphor.



Section of Vineyard

Light

Culture

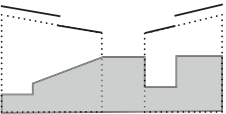
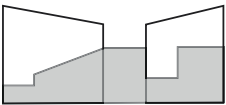
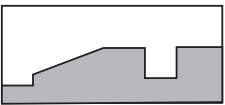
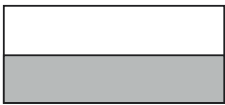
Spirit

Heavy

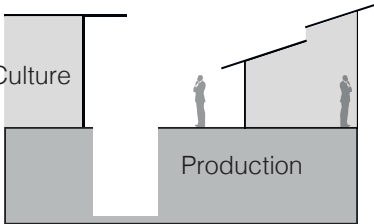
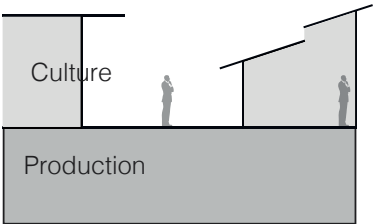
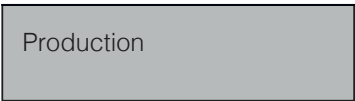
Production

Material

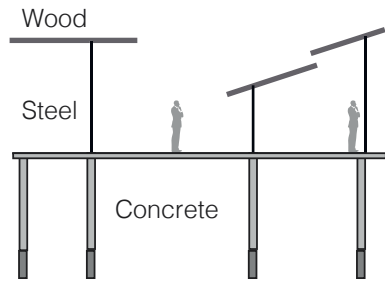
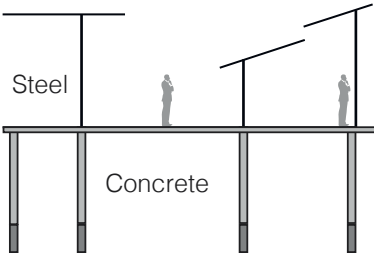
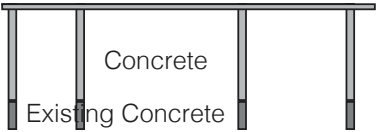
Form



Function



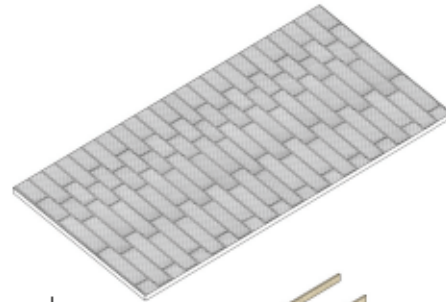
Structure



Structure

The project is redesigned in the east part of the existing building and structure of underground is preserved, so new structure is based on the existing structural grid. Reinforced concrete structure is used on ground floor to provide larger loading capacity for the storehouse on the first floor. The structure of upper floor changes to light steel structure to support the wooden roof. The transformation of the building structure coincides with concept of heaviness to lightness.

Seam metal roof



Wood rafter



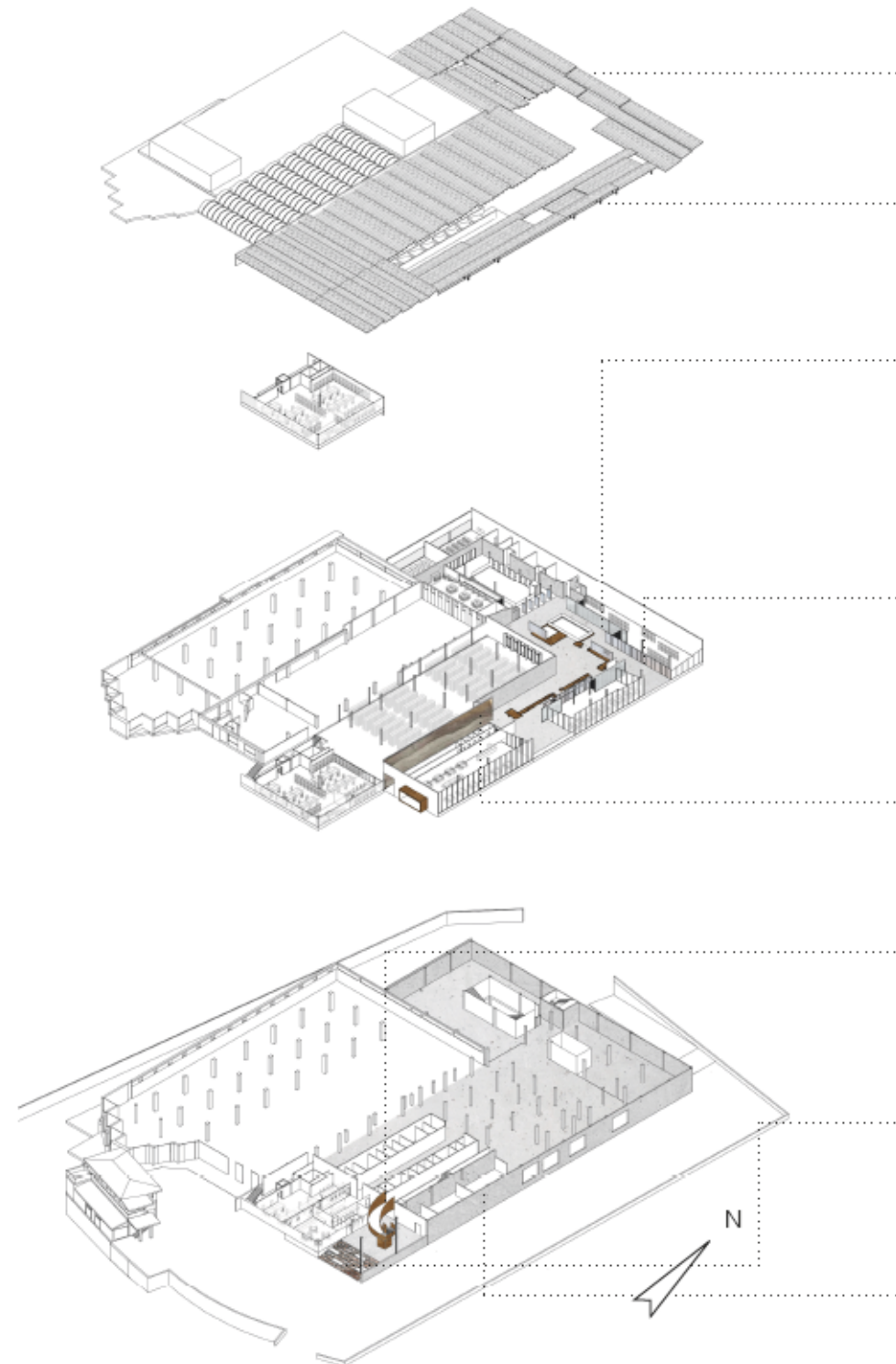
Wood joint



Steel column and beam



Concrete structure on ground floor is built in existing concrete structure grid.





Seam metal



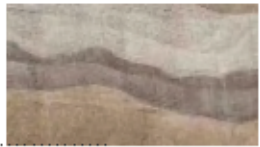
Wood



Translucent polycarbonate



Aluminium sheet polished.



Earth wall



Corten



Rubble



Concrete

Transformation of Material

The change of material follows perception from heavy to light vertically. On the ground floor, materials are rubble, reinforced concrete and corten to build a heavy atmosphere to imply relationship with the earth. On the upper floor, materials are translucent polycarbonate sheeting, polished aluminium sheets and polished seam metal to form a light volume floating above the vineyard.

Presenting

Seam metal, Translucent polycarbonate and polished aluminium sheet are the material which are influenced by surrounding environment easily. In other words, they easily let in sunlight, rain-water and people's movement. It is easy to feel natural elements when they show in particular material.

Vague

Translucent and polished materials blur the boundary of space and overlaps scenes in the reflections of aluminium sheet.

Land

Soil wall, corten, rubble and concrete are heavy feeling sense materials. These materials imply feeling of land.



Fig 27. Kresge Chapel



Fig 28. Rain Room



Fig 29. Lines of Flight-to the Sahara

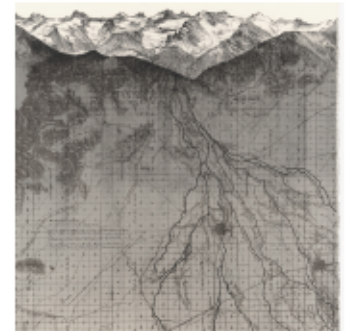
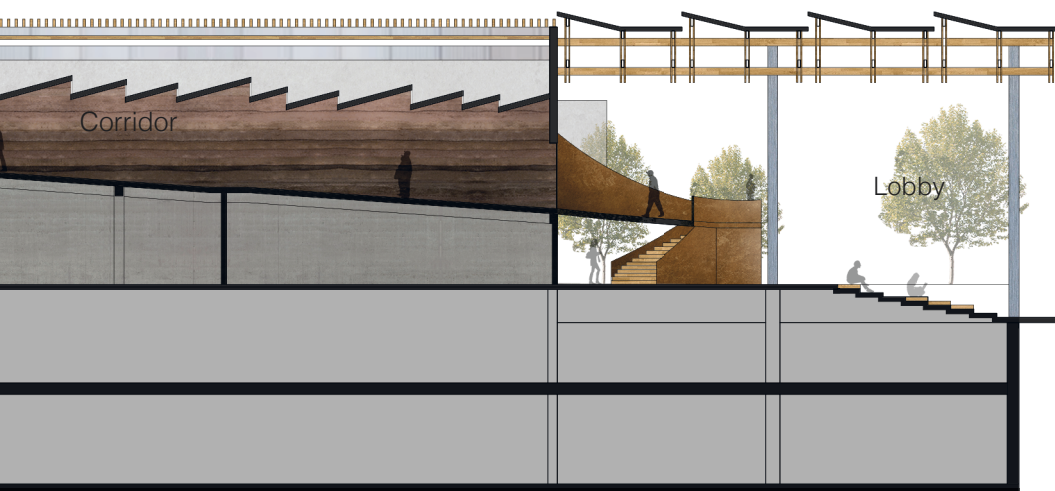
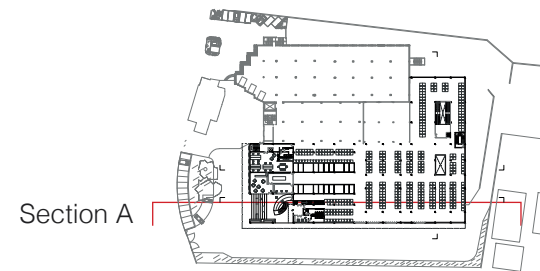


Fig 30. Stronghold - Due East from Moro Roo

Section



Section A



▽ + 9.6m

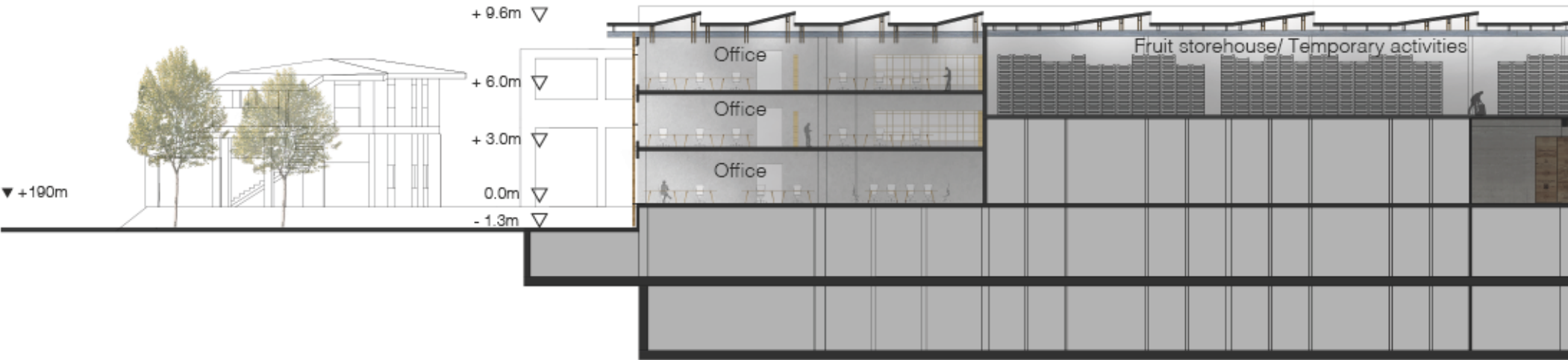
▽ + 8.0m

▽ + 2.5m

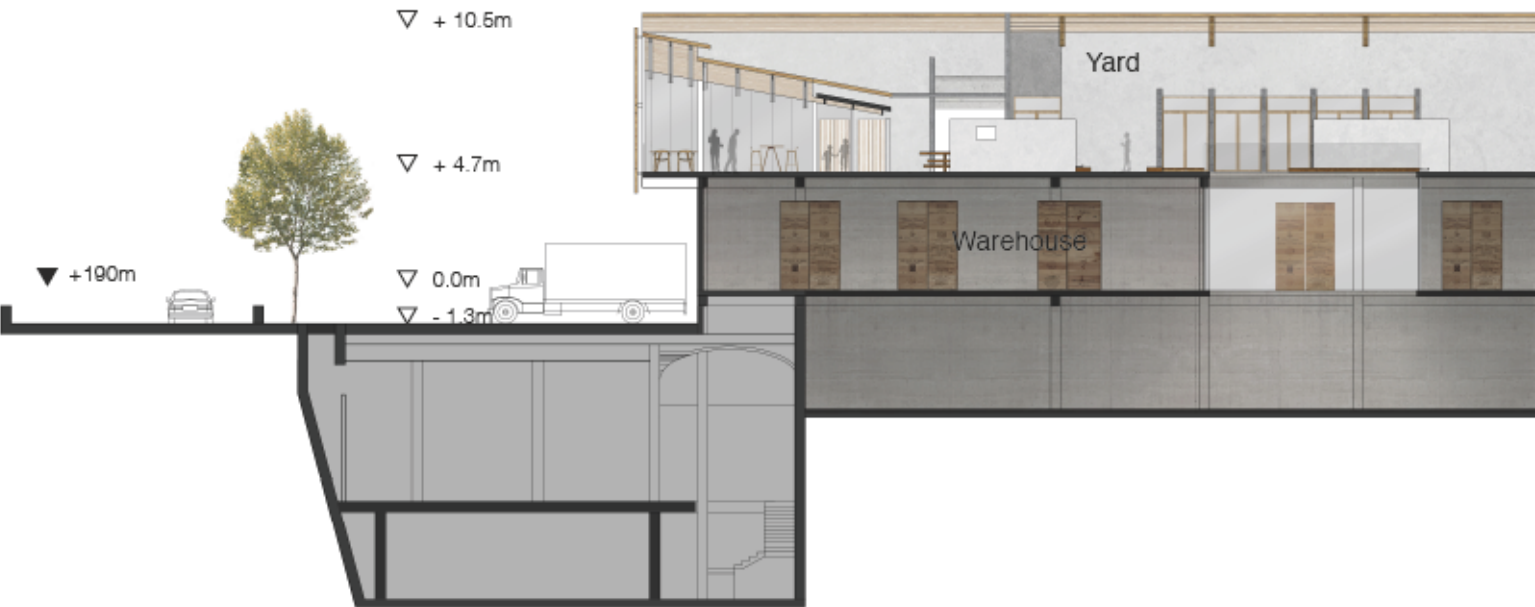
▽ 0.0m

▽ - 1.3m

Section



Section B



Section C

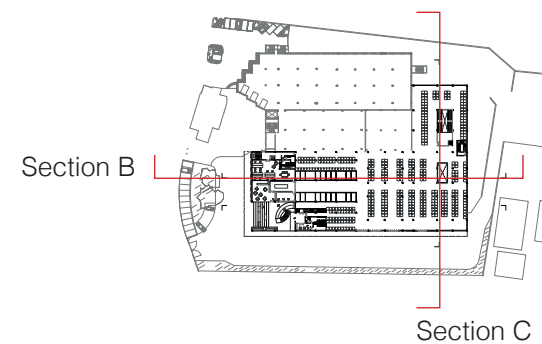


▽ + 10.5m

▽ + 4.7m

▽ 0.0m

▽ - 4.7m



Section B

Section C



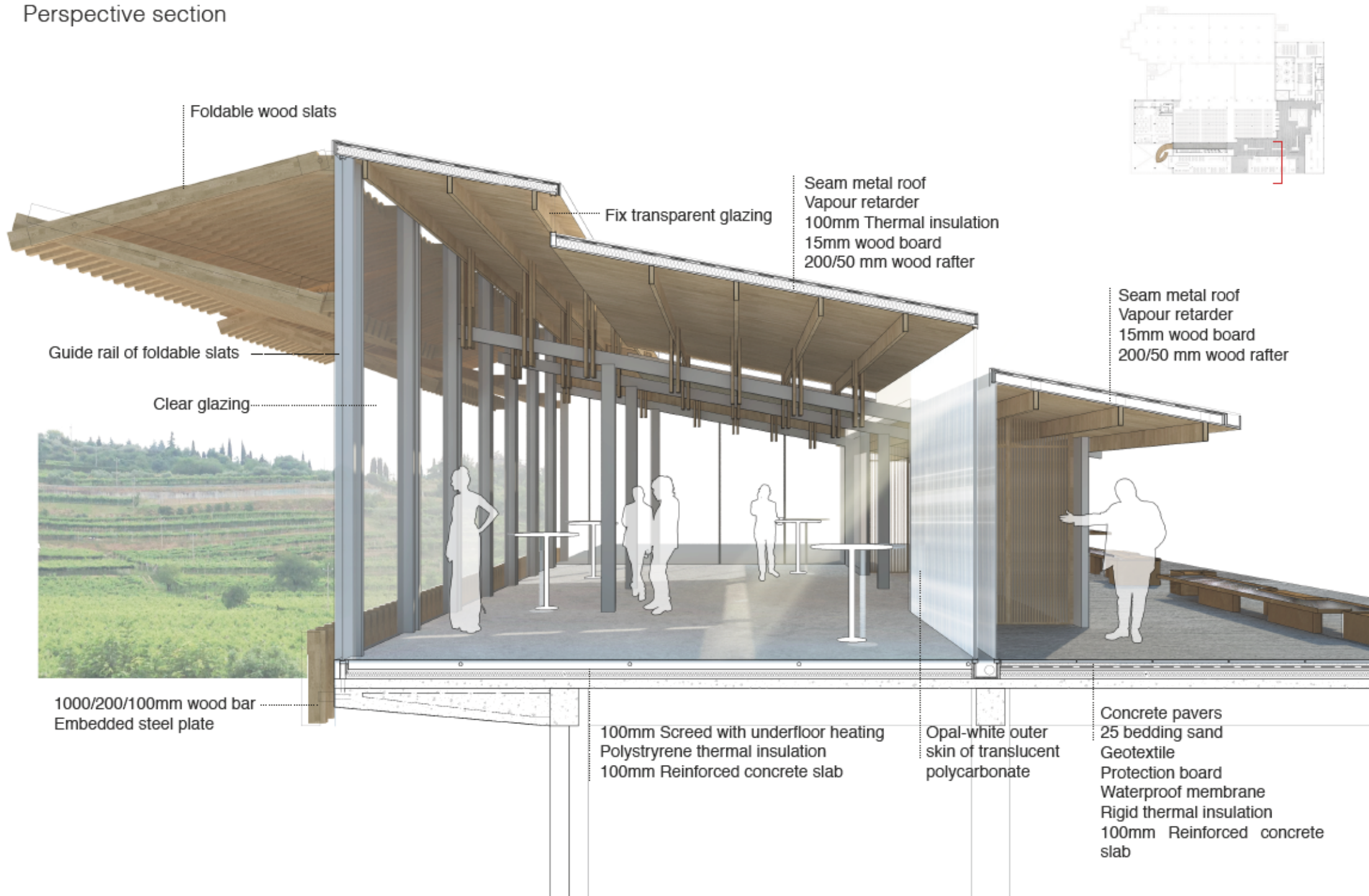
▽ + 10.1m

▽ + 4.7m

▽ 0.0m

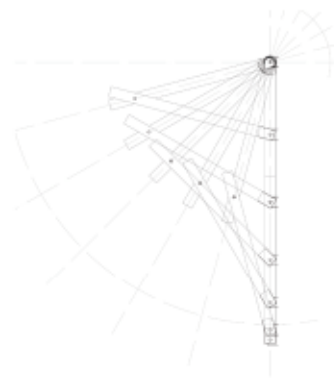
▽ - 4.7m

Perspective section



Dynamic nature

The natural elements change all the time and are not able to duplicated again. Sunlight and rain are important to the vineyard. Dynamic sunlight and rain remind people to feel them in the architecture. Gaps between different high roofs bring light to the interior in a subtle way. Pitched roofs slope to courtyard and the people in the courtyard can observe sunshine which is presented on the reflected metal skin of roof. Rainwater falls into a special hollow and translucent wall to create dynamic texture of wall.



Foldable wood slats on east facade



Facades

Facades are decorated with linear wood slats to optimize interior light and minimize the volume of the building. The east facade consists of concrete on ground floor and wood slats on the first floor. Clear glazing behind of wood slats provides continual views to the vineyard. Folding wood slats on the east facade makes the first floor look lighter and smaller in volume and blocks sunlight in the morning as well. When the wood slats is folded it forms a dynamic canopy to respond to the landscape of the foothills.

1. Wood slat
2. Concrete
3. Corten
4. Glass
5. Seam metal roof
6. Translucent polycarbonate

0 2 4 6 8 10m





Space Experience

- Lobby
- Corridor
- Courtyard





Metaphor

The lobby gives the first impression about the wine culture centre to tourists. Material and space of lobby implies the whole concept of the architecture. Outdoor space with roof keeps the lobby connected with nature. Rubble steps and the concrete floor show the heavy ground, while the curved staircase clad with corten draws rises people's sight upward. The dynamic staircase guides visitors to climb up and turn back to see the vineyard from a higher position. Sky can be seen through linear gaps between the wooden structure of the roof. The transformation of material in lobby implies the logic from heavy to light.





Rituality

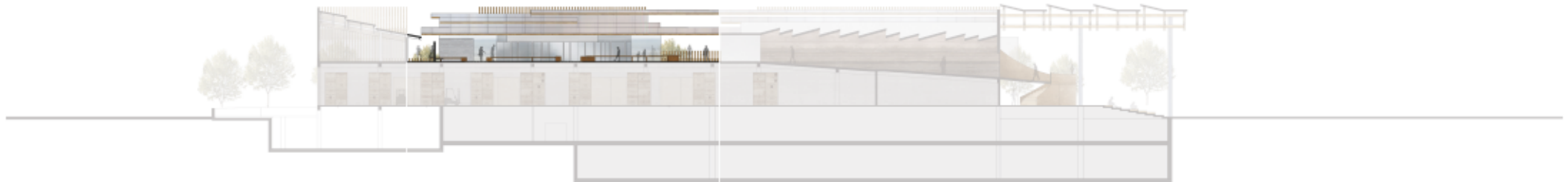
The curving staircase and corridor connect visitors from the lobby to the social area on the first floor. The staircase and corridor are a ritual for tourists to filter routines and focus on wine world in following journey. Both sides of the corridor are constructed with rammed earth, dim natural light leaks from skylights. Watching, touching and smelling earth evoke people's respect to land.





Vague Space

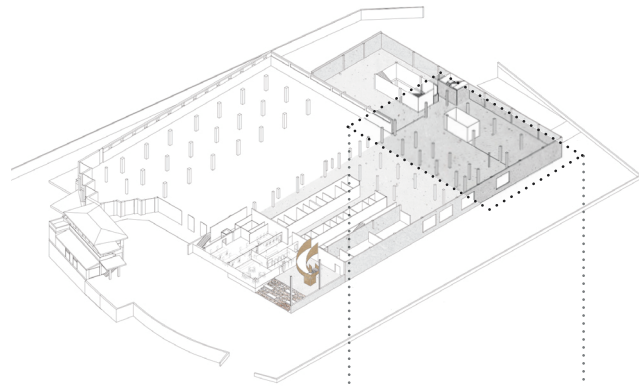
Social area is the place where tourists can drink and freely move from indoors or outdoors freely. Different rooms enclose an outdoor courtyard in the middle as ambiguous space. The arrangement of walls and material blur the boundary between the interior and the courtyard. Polished aluminium sheet and water reflect scenes in courtyard, while the translucent polycarbonate and gaps in wall leak people's indoor activity to courtyard. The different atmospheres leak out from rooms and blend in courtyard. The linear pond and water's flowing guide people's movement in the courtyard.



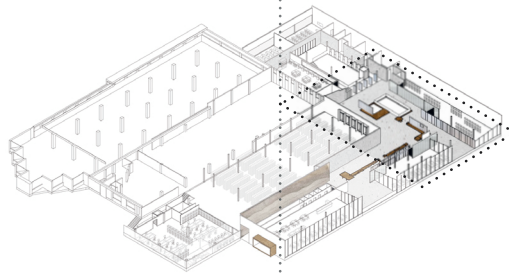
Conclusion

The design proposal presents an architecture that connects a spatial atmosphere with the experience of wine. Wine captures the local climate, land, history and culture and tourists can feel sunlight, rainwater and land when they experience the architecture. The rituals in tasting wine help to realise wine's color, clarity, aroma and so on. Similarly, the circulation of the building moves through a Ritual sequence of spaces to experience various atmospheres that metaphorically depict the experience of making and drinking wine. By introducing the concept of vague space, I manifest the intoxicating feelings of drink wine into architectural space. The similarities between architecture and wine evoke architectural emotions. As Le Corbusier's says *"The purpose of architecture is to move us. Architectural emotion exists when the work rings within us in tune with a universe whose laws we obey, recognize and respect."* With this thesis, I show that by studying the rituals and experience of drinking wine can manifest into an experience of architecture.

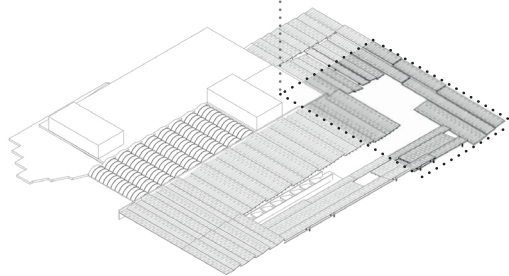




Level 0

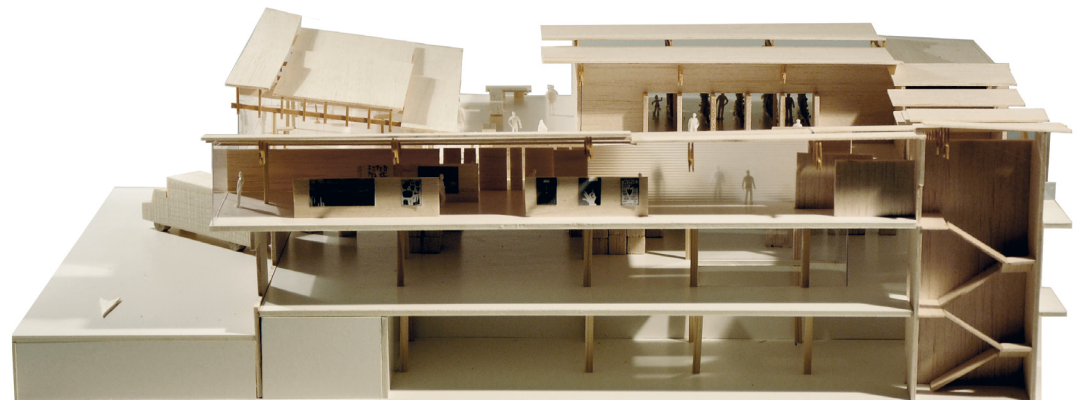
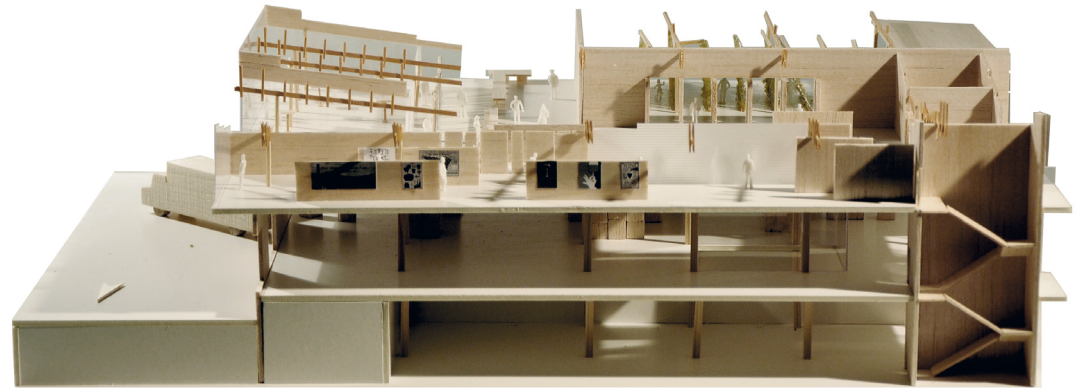
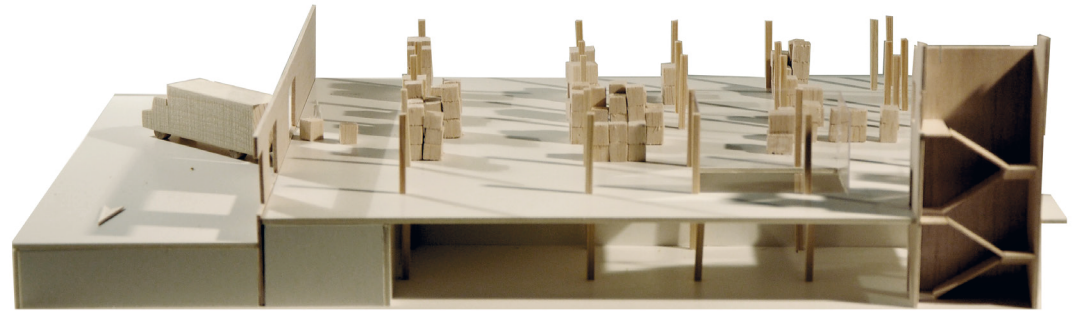


Level 1



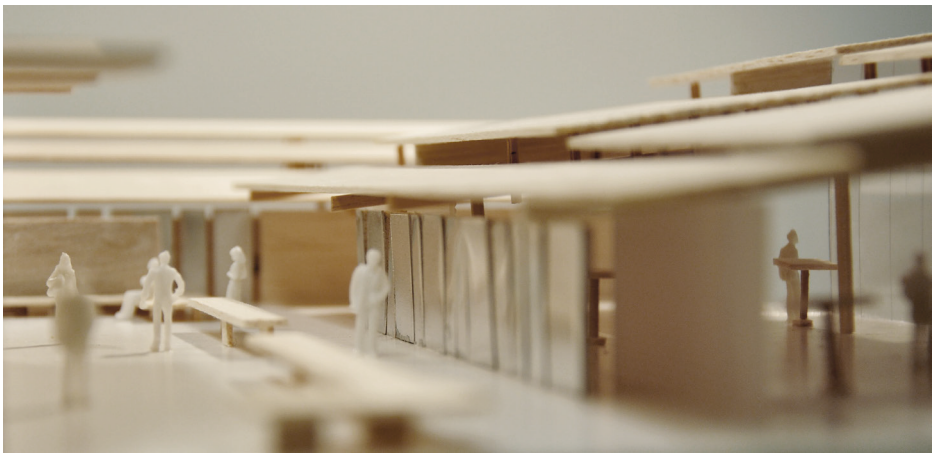
Roof

Section model 1:100

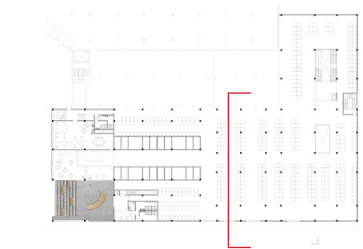




Fruit Storehouse and Warehouse



Yard and Multi-room





Site model 1:500



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Fig1. Verona's Map. <www.mapbox.com>
Fig2. Lake Garda. <http://travelioo.com/img/Lake-Garda-Photo1.jpg>
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Fig 11. Wine Tasting Sketch, Haim Barad, Wine Tasting Infographic, DrunkedIn, 24 JANUARY 2013, <<http://drunkedin.net/blog/237-wine-tasting-infographic.html>>
Fig 12. People's movement. Danica Radman. <http://www.redbubble.com/people/tazzina/works/4609859-masterpiece-encourages-us-to-live-life-with-eyes-wide-open?p=greeting-card>
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Fig 13. Glass Pavilion at the Toledo Museum of Art. Basulto David. "Glass Pavilion at the Toledo Museum of Art / SANAA" 28 Mar 2010. ArchDaily. Accessed 10 Feb 2015. <<http://www.archdaily.com/?p=54199>>
Fig 14. Double Blind, Robert Irwin. <http://jennilee.tumblr.com/post/63666349149/unabide-robert-irwin-double-blind>
Fig 15. Translucent polycarbonate. https://www.polantis.com/fr/data/365/355/9981/Everlite-Danpalon_Alu_p_productpage.png
Fig 16. polycarbonate skin. "151 Homes, Shops And Garage In Mieres / Amann Canovas Maruri" 20 Mar 2013. ArchDaily. Accessed 10 Feb 2015. <<http://www.archdaily.com/?p=346619>>
Fig 17. Swiss pavilion at EXPO 2000 in Hannover. http://brainport.bwk.tue.nl/wp-content/uploads/2011/05/peter-zumthor-swiss_sound_box.jpg
Fig 18. The screen shifts between being opaque and semitransparent, YE RIN MOK <http://www.dwell.com/my-house/article/startin-spartan#7>
Fig 19. Swiss pavilion at EXPO 2000 in Hannover. http://mjobrien.com/uploads_general/2_Swiss_Sound_Box.pdf
Fig 20. Glass Pavilion at the Toledo Museum of Art. Basulto David. "Glass Pavilion at the Toledo Museum of Art / SANAA" 28 Mar 2010. ArchDaily. Accessed 10 Feb 2015. <<http://www.archdaily.com/?p=54199>>
Fig 21. Wind direction distribution. Wind & weather statistics Verona-Villafranca Aeroporto. http://www.windfinder.com/windstatistics/verona-villafranca_aeroporto
Fig 22. Sun path diagram. <http://www.gaisma.com/en/location/verona.html>
Fig 23. Temperature. Average Weather For Verona, Italy. <https://weatherspark.com/averages/32286/Verona-Italy>
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Fig 26. Lines of Flight, Akihito Takuma. <http://artfucksme.com/akihito-takuma/>
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Fig 29. Lines of Flight-to the Sahara, Akihito Takuma. <http://www.akihitotakuma.com/taku.en.ph327.html>
Fig 30. Stronghold - Due East from Moro Roc. <https://sites.google.com/site/matthewrangel/atransect-du-east%C2%A0gallery>

Acknowledgement

Thank you to my family and friends for their support and to my thesis supervisor, Pirjo Sanaksenaho for her inspiring guidance.

